

FALL 2024

MSE 690 SEMINAR SERIES

MONDAY, OCT. 21ST | 3:30 REFRESHMENTS | 3:45PM SEMINAR | ARMS 1010

“Measuring what matters - and acting on it: moving from data to insight and structure control in Additive Manufacturing”

Abstract:

During Additive Manufacture of components we can capture vast quantities of data and this is both a blessing – in that we obtain a rich source of sensor data for analysis – and a curse because the time required to perform the analysis can be considerable. In this talk I will describe some of the approaches we have been taking to enable us to be more selective in data sampling and use this, without losing insight, for direct in-process control of LPBF and Electron Beam PBF. I will also discuss how we are employing physics based models to enable microstructure and property control during AM.

Biography:

Iain Todd is Director of the MAPP Future Manufacturing Hub in Advanced Powder Processes, and the Made Smarter Innovation: Materials Made Smarter Centre. His research lies at the interface between manufacturing technology and materials processing science and concerns the development of understanding of underlying physical principles related to materials processing to better control material form, integrity and function and hence economic value. His work is conducted in close collaboration with Industry and on an appropriate scale to allow rapid transition of new laboratory discoveries into industrial practice. He has led research programs with and worked as a consultant to FTSE 100 companies in respect of Materials and Materials Processing Technology selection and implementation including GKN, Rolls Royce, WEIR Group and Johnson Matthey and held the RAEng/ GKN Aerospace Research chair in Additive Manufacturing and Advanced Structural Metallics from 2015-2020.



Iain Todd

Director Materials Made Smarter Research Centre



PURDUE
UNIVERSITY®

School of Materials Engineering